Moreover, he finds that cellular service prices in states with regulation are generally higher than states without regulation. *Id.* He concludes that the HPUC has not provided pursuasive evidence to support its petition that state rate regulation should be continued in Hawaii.

CONCLUSION

The HPUC petition has failed to satisfy the substantial burden established by the Congress to overcome the federal preemption of state regulation of CMRS. Congress empowered the FCC to uniformly govern the offering of all commercial mobile radio services and provided a limited exception for individual states to rate regulate only where there is a demonstrated market failure. As Congress stated, "the Commission ... should be mindful of the Committee's desire to give the policies embodie[d] in Section 332(c) an adequate opportunity to yield the benefits of increased competition and subscriber choice." House Report at 259-60. The Commission, having made a decision to detariff CMRS services, should deny the HPUC petition to allow Congressional

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(...continued)
be made and should not be done on a regular basis. Therefore, if a carrier files a promotion or a new rate plan under the normal 30-day notice period, a competitor may simply file tariff revisions to match the promotion or new rate plan and use a "competitive response" argument to show good cause. Indeed, this sort of regulatory gaming was a major reason that the FCC exempted CMRS providers from Federal tariff regulation.

policy to take affect. Such action will send an important signal to the states that substantial cases must be brought before any exception to Congress' (and the FCC's) policy is granted.

Respectfully submitted,

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September 19, 1994

Exhibit A

Chronological History of Cellular Service Pricing

Honolulu Cellular Telephone Company

LEGEND	
Font Style	**Indication**
BOLD FACE	Decreases in rates and service charges
ITALICS	Increases in rates and service charges
NORMAL	No change; additional notes

Effective April 1986

Basic Service Plans

Service Plan	Monthly Access	Per Min. (Peak) 7a-7p M-F	Per Min. (Off-Peak) 7p-7a M-Sun 7a-7p Sat, Sun, Hol	Free Minutes
Option I	$69.00	$.40	$.15	0-75
Option II	$19.00	$.55	$.25	n/a
Option III	$0	$.90	$.35	n/a

Service Order Charge

A Service Order Charge of $22.50 per request is instituted to perform any of the following:

1. Process a service order for activation and commencement of a cellular number.
2. Add or modify any optional feature per cellular number.
3. Change the identification number (ESN) of a cellular number.
4. Reactivate or restore service of a temporarily discontinued number.
5. Change a cellular number.

Personalized Mobile Number Charge

A Personalized Number charge of $40.00 is established

Optional Call Features

The following charges are instituted. Charges are per cellular number.

Call Forwarding	$3.95 per mo + .10 per min
No Answer Transfer	$3.95 per mo + .10 per min
Call Waiting/Call Holding	$3.95 per mo + .10 per min
Call Conferencing	$3.95 per mo + .10 per min
Enhancement Features Package (combination of all features)	$9.00 per mo + .10 per min

Optional Call Restrictions

A $35 non-recurring charge for call restrictions per cellular number is established for any combination of the following features:

Incoming Calls Only
Outgoing Calls Only
Long Distance/Toll Call Denial
808 Area Code Calls Only
Operated Assisted Call Denial

Detailed Billing

The following charges are established for itemized billing of optional features, usage and toll charges for local calls:

Monthly Detailed Billing	$2.00 (Local Usage)
Special Detailed Billing, Per Number, Per Request	$4.50

Effective June 1986

Free Calls

Calls to 911 are free of charge.

Effective July 1986

On-Going Promotion; FREE USAGE FOR MARKETING RESPONSES

HCTC customers who provide responses to surveys and evaluations or provide testimonials about HCTC which are used for promotional purposes are entitled to 30 free minutes of usage (peak and/or off-peak). Free usage is only good for month following the month response is submitted or testimonial is used.

Effective August 1986

Optional Call Features

Individual charges for Call Forwarding, No Answer Transfer, Call Waiting/Call Holding and Call Conferencing are dropped. The Enhancement Features Package which represents a combination of all these optional call features remains. Cost for this package is dropped from $9.00 per month + .10 per minute to a .10 per minute flat rate.

Voice Mail Service is established at $.20 per minute per cellular phone.

Always in Touch is added which is priced based on a combination of any of the following services:

Pager
Paging Service
Voice Mail Service

Optional Call Restrictions

The $35.00 non-recurring charge originally established is dropped. Call restriction capabilities are now available at no charge in any combination of features aforementioned. In addition, a Hotline restriction (allowing phone to call only one predesignated number) capability is added.

Effective October 1986

Promotion: FREE 125 MINUTES/WAIVER OF ACTIVATION FEE

Offer Date: November 3-21, 1986

1) **Up to 125 peak time minutes are free of charge based on Option I per minute rate of $.40. $25.00 is credited to any cellular airtime used in November and December.**

2) **In addition, the $22.50 activation fee is waived if service established prior to November 21.**

3) **Credit to customer given in their respective 12/86 and 1/87 bills.**

Effective December 1986

Basic Service Plans

Option IV (otherwise called "Automatic Rate Calculation," "ARC" or "Commitment Program") is implemented. ARC provides the following benefits to customers of HCTC:

1) **Calculates customers' usage monthly and selects lowest option plan between I, II and III.**

2) **Free Loaner Program (in the event of hardware servicing needed).**

3) **Free Voice Mail Service (up to 60 minutes per month). Based on rate of $.20 per minute, this benefit is valued at $12.00 per month.**

Customers on ARC are required to sign a one-year service agreement with HCTC and are assessed a minimum usage charge of $15.00 per month.

Effective February 1988

Promotion: WAIVER OF SERVICE ORDER CHARGE

Offer Date: February 29 - March 29, 1988
Valued at $22.50

Effective April 1988

U.S. Military & Government Service Plans

A rate plan is established for U.S. Military and Government entities as follows:

Low Usage (0-299 minutes/phone/month)	**$.49/minute**
High Usage (300+ minutes/phone/month)	**$.45/minute**

Includes monthly Access Charge, Enhanced Features Package, Detailed Billing, Service Order Charge, and Optional Service Features.

Effective July 1988

Basic Service Plans

The Bulk Service Plan is established, allowing customers with 10 or more phone numbers a 5% discount on airtime charges.

The free 0-75 minutes on Option I is now prorated against actual peak and off-peak usage.

Optional Call Features

Call Waiting/Call Holding and Call Conferencing are now charged as two calls at the original rate of $.10 per minute.

Free Calls

In addition to the free calls to 911, calls to HCTC Customer Service are free of charge.

Effective September 1988

Promotion: FREE UNLIMITED USAGE FOR A WEEK

Customers are granted free airtime usage and certain enhanced services when signing up for ARC. On the day of the week the customer activated with HCTC, they received free airtime usage until midnight of the following week on the same day their service was activated.

Offer Date: September 1-23, 1988

Effective April 1989

Basic Service Plans

Option VI is established and replaces Option III. The per minute rates of $.90 and $.35 remain the same, and a $10.00 monthly access fee is imposed. Option VI includes 0-15 free minutes per month (prorated against actual peak and off-peak usage). Fifteen minutes calculated at 100% peak usage is valued at $13.50. Therefore, customers may receive a savings of $3.50 per month.

Service Order Charge

The Original $22.50 Service Order Charge for the items #2 and #3 is dropped to $10.00 and is hereby referred to as a "Change Order Charge." (Items numbers 1, 4 and 5 remain at $22.50 per request.)

1. Process a service order for activation and commencement of a cellular number.
2. **Add or modify any optional feature per cellular number.**
3. **Change the identification number (ESN) of a cellular number.**
4. Reactivate or restore service of a temporarily discontinued number.
5. Change a cellular number.

Effective September 1989

Optional Call Features

Voice Mail Services are available in three categories as follows:

Basic	$.20/minute
Enhanced	$.25/minute
Corporate	$.30/minute

Promotion: FREE AMS

A special introductory offer to HCTC customers to try out the Answering Machine Service.

Offer Date: Through October 10, 1989

Effective March 1990

On-Going Promotion: FREE USAGE FOR PROMOTIONAL DRAWINGS

HCTC is allowed to provide up to seven consecutive days of unlimited free usage to individuals who are selected in random drawings.

Effective June 1990

On-Going Promotion: NON-PROFIT, TAX-EXEMPT ORGANIZATIONS

HCTC is allowed to provide non-profit, tax-exempt organizations with cellular phones, without charges, for periods of time not to exceed four days for activities where landline phones are unavailable or inadequate. This loan period may extend up to seven days if activity is for fundraising purposes for other events which benefit the organization.

Effective July 1990

Promotion: REFER-A-FRIEND

Offer Date: July 1 - September 30, 1990

Customers are given a $50 airtime credit for every referral resulting in a new activation for HCTC.

Effective September 1990

Detailed Billing

In addition to the services of monthly detail airtime billing and special detail billing, two new categories are established:

Itemized billing of AMS activity	$2.00/month
Combination of airtime and AMS	**$3.00/month ($4.00 if separate)**

Effective September 1991

Promotion: REIMBURSEMENT FOR ADVERTISING

Bulk Service customers who include their cellular numbers on their business cards and/or in any Hawaii yellow pages directory are credited up to $50.00 towards the initial printing costs of their business cards and/or $100 for yellow pages advertising. Credit is applied to customer's account.

Offer Date: Through December 31, 1991

Effective October 1991

Promotion: WAIVER OF SERVICE ORDER CHARGE/INSTALLATION FEE

Activation charge of $22.50 is waived for customers establishing service on ARC and installation charge for mobile phones valued at $200 is waived. Offers can be combined.

Offer Date: October 14 - November 17, 1991

Promotion: BUY A MOTOROLA PT2000, GET A $100 SAVINGS BOND

Customers are given a $100 Series EE U.S. Savings Bond when they purchase and activate (also waived at this time) a phone.

Offer Date: Through October 31, 1991 (Activation Waiver through November 17, 1991)

Effective January 1993

Promotion: UP TO 150 MINUTES FREE AIRTIME USAGE

Customers purchasing and activating a phone on the ARC plan are granted up to 150 minutes of free airtime.

Offer Date: January 4 - February 19, 1993

Effective April 1993

Promotion: WAIVER OF SERVICE ORDER CHARGE

The $22.50 activation charge is waived for customers who purchase a new phone.

Offer Date: April 19 - May 18, 1993

Effective November 1993

Basic Service Plans

A Bulk ARC Plan is established for those customers with 10 or more phones on one account, entitling them to a 5% discount.

Effective April 1994

Service Order Charge

The original Service Order Charge of $22.50 is increased to $25.00 per request to perform any of the following:

1. Process a service order for activation and commencement of a cellular number.
2. Reactivate or restore service of a temporarily discontinued number.
3. Change a cellular number.

Optional Call Restrictions

The Hotline restriction is deleted from options.

Effective July 1994

Basic Service Plans: TRIAL OFFER

This trial offer was offered to 400 customers of HCTC, which resulted in a participation rate of 32%. A Tariff had been filed to implement this program and is projected to be in effect by October 1994.

The Unlimited Weekend Plan is implemented. For $9.95 a month, customers have unlimited use on weekends (beginning 12 midnight Friday and ending 11:59 p.m. Sunday).

Optional Call Features

Direct Connect is established and made available to HCTC customers. Charge is at $.50 per call plus airtime.

Effective August 1994

Other Enhanced Services

*SOS (roadside service) is implemented. Customers are able to sign up for this optional service at $2.00 per month.

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington D.C. 20554

In the matter of	)	
	)	
Petition of Public Utilities	)	PR File No. 94-SP1
Commission, State of Hawaii, for	)	
Authority to Extend Its Rate	)	
Regulation of Commercial Mobile	)	
Radio Services in the State of Hawaii	)	
	)	
	)	

DISTRICT OF COLUMBIA) **ss:**

AFFIDAVIT OF RICHARD P. ROZEK

I. BACKGROUND AND QUALIFICATIONS

(1) My name is Richard P. Rozek. I am an economist and a Vice President of National Economic Research Associates, Inc. (NERA), a firm specializing in the economics of competition and regulation. My business address is 1800 M Street, N.W., Washington, D.C. 20036.

(2) I will briefly summarize my background as it pertains to this submission. I earned a B.A. degree *cum laude* in mathematics from the College of St. Thomas in 1969. I earned a M.A. degree in mathematics from the University of Minnesota in 1971; and I earned M.A. and Ph.D. degrees in economics from the University of Iowa in 1974 and 1976, respectively.

(3) At the time I was awarded a Ph.D. degree, I was an assistant professor in the Department of Economics at the University of Pittsburgh. I continued in that position until January 1979. I then joined the Bureau of Economics at the U.S. Federal Trade Commission (FTC) in Washington, D.C. as a staff economist. I worked at the FTC in the antitrust and regulatory analysis divisions for six and one-half years, holding several senior staff positions including Deputy Assistant

Director for Antitrust. While at the FTC, I worked on analyses of mergers in high-technology industries and, more generally, on projects involving antitrust and regulatory issues in a wide variety of industries. In July 1985, I became the economist at the Pharmaceutical Manufacturers Association. I joined NERA in July 1987 as a Senior Consultant, and I was elected Vice President in September 1991. I have published approximately 30 articles in professional journals on topics such as competition policy, incentives for innovation, vertical integration and behavior of firms subject to regulatory constraints.

(4) Since joining NERA, I have worked on projects involving introducing competition into heretofore regulated industries, developing standards for effective competition, and assessing the competitiveness of particular markets as part of antitrust proceedings. I have testified at trials and in depositions on competition issues. I have submitted three affidavits to the U.S. District Court in connection with requests for waivers of the Modification of Final Judgment (MFJ).[1] I have submitted three affidavits on the competitive impact of the merger of the American Telephone and Telegraph Company (AT&T) and McCaw Cellular Communications, Inc. (McCaw) as part of the review of the application before the Federal Communications Commission (FCC) to transfer certain licenses from McCaw to AT&T.[2] Finally, I have submitted an affidavit to the FCC on bidding issues in connection with auctions for spectrum.[3] I attach a copy of my current vita (Attachment A).

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[1] Affidavit of Charles L. Jackson and Richard P. Rozek in the matter of *U.S. v. Western Electric Co. and American Telephone and Telegraph Company*, U.S. District Court for the District of Columbia, Civil Action No. 82-0192-HHG, supporting the "Request by BellSouth Corporation for a Waiver of the Modification of Final Judgment to Allow BellSouth Corporation to Provide Integrated MultiLATA Cellular Service," filed May 9, 1991; Affidavit of Richard P. Rozek and Harold Ware in the matter of *U.S. v. Western Electric Co. and American Telephone and Telegraph Company*, U.S. District Court for the District of Columbia, Civil Action No. 82-0192-HHG, supporting "BellSouth Corporation's Opposition to AT&T's Motion for a Waiver of Section I(D) of the Decree Insofar as it Bars the Proposed AT&T - McCaw Merger," filed June 28, 1994; and Affidavit of Richard P. Rozek and Harold Ware in the matter of *U.S. v. Western Electric Co. and American Telephone and Telegraph Company*, U.S. District Court for the District of Columbia, Civil Action No. 82-0192-HHG, supporting the "Reply of BellSouth Corporation in Support of its Motion for Generic Wireless Relief," filed September 2, 1994.

[2] *See* "Petition to Impose Conditional Grant to Create a Competitive Market, or Deny as Filed," "BellSouth Reply" and "Further Comments Supplementing BellSouth's Petition," before the Federal Communications Commission in the matter of *AT&T-McCaw Merger, In re applications of American Telephone and Telegraph Company and Craig O. McCaw For Consent to the Transfer of Control of McCaw Cellular Communications, Inc. and its Subsidiaries*, File No. ENF-93-44, filed November 1, 1993, January 18, 1994, and June 20, 1994, respectively.

[3] Affidavit of Richard P. Rozek on behalf of BellSouth Corporation before the Federal Communications Commission in the matter of *Amendment of the Commission's Rules to Establish New Personal Communications Services*, GEN Docket No. 90-314, filed August 30, 1994.

II. PURPOSE AND SUMMARY

(5) The purpose of this affidavit is to address issues raised by the Hawaii Public Utilities Commission (HPUC) in its petition to continue regulating commercial mobile radio services (CMRS).[4] Generally, state regulation of CMRS raises prices of cellular mobile telephone services to consumers. Based on statistical analysis of cellular rates, consumers in states with regulation of cellular providers at both wholesale and retail levels pay higher monthly prices for cellular services than consumers in states without regulation. State regulation impedes competition among CMRS providers.

(6) The petition from the HPUC focuses extensively on the rate of return of CMRS providers. HPUC raises concerns about perceived high rates of return for CMRS firms operating in Hawaii. But, it misinterprets the accounting data that it uses to calculate rates of return. As a result, the HPUC has failed to show that high rates of return are a problem that continued state regulation must address.

III. HPUC DOES NOT ESTABLISH A CASE FOR CONTINUING REGULATION OF CMRS

A. Consumers Pay Higher Prices Due to State Regulation

(7) Our econometric analysis reveals that state regulation raises costs to consumers.[5] Specifically, we constructed a regression model using 1993 cellular rates in the top 100 MSAs as the dependent variable to examine the effect of state regulation.[6] The rates are the minimum charge for the average cellular customer with usage of 125 minutes per month (75 percent peak and 25 percent off-peak). In analyzing the rates, we control statistically for differences in: income; population;

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[4] *See In the Petition of Public Utilities Commission, State of Hawaii, for Authority to Extend its Rate Regulation of Commercial Mobile Radio Services in the State of Hawaii* before the Federal Communications Commission, filed August 4, 1994 (HPUC Petition).

[5] There are considerable, well documented benefits to deregulation in a number of industries including telecommunications. *See* C. Winston, "Economic Deregulation: Days of Reckoning for Microeconomists," *Journal of Economic Literature*, Vol. 31, September 1993, pp. 1263-1289. Winston concludes "the evidence clearly shows that microeconomists' predictions that deregulation would produce substantial benefits for Americans have been generally accurate; hence their predictions of additional benefits from continuing the process should be taken seriously" (footnote omitted) (p. 1286.)

[6] *Cellular Rates*, Paul Kagan Associates, Inc., January 1994, Vol. 1, pp. 47-48. We checked the data for those cases in which there were substantial differences ($10.00 or more per month) between the lowest reported rates for the two providers in a MSA. We recalculated the minimum charge based on the raw data for the relevant plans reported by Kagan. This resulted in changes to five of the 200 prices in the top 100 areas.

number of RBOC providers in the market (zero, one or two); regulation of wholesale and retail rates;[7] and the operating company i.e. BellSouth, Ameritech, NYNEX, Bell Atlantic, Southwestern Bell, AirTouch, US West, McCaw and other. The specification of the model is presented in Attachment B. The regression results show that state regulation of both wholesale and retail rates raises prices by $8.63 per month.

(8) These results are consistent with the statistical analysis by Hausman in which he controls for similar factors (regulation, population, income and commuting distance). He finds that cellular prices are about 5-10 percent higher in states that regulate CMRS.[8]

B. Rate of Return Data are Misinterpreted by HPUC

1. HPUC Does Not Take Risk Into Account

(9) HPUC's primary argument for continuing to regulate CMRS is the alleged imbalance between CMRS providers' revenues and costs. HPUC is concerned that CMRS providers are earning an "increase in the rate of return on the invested plant and equipment."[9] However, the HPUC misses the point that providers of CMRS are not traditional public utilities such as those in the electric utility industry; that is, an established industry with both stable technology and demand as well as a lack of competition at some levels. Providing cellular services is a risky endeavor. There has been substantial unexpected growth in subscribers. Subscribers have grown from zero to 19 million in just over ten years.

(10) Stock market data confirm greater risk in the cellular industry than in the electric utility industry. *See* Table 1 in Attachment C. A standard measure of risk for individual securities is *beta*, which measures the fluctuation of a firm's stock price relative to the general stock market. A value of beta greater than one indicates an investment is riskier than investing in the market as a

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[7] A regulated jurisdiction requires a cellular provider to obtain a Certificate of Public Convenience and Necessity and file tariffs for both the wholesale and retail levels. There are nine jurisdictions in this category: Alaska, California, Hawaii, Louisiana, Massachusetts, Nevada, New York, West Virginia and Puerto Rico. "Summary: State Regulation of Cellular Telephone Service," Cellular Telecommunications Industry Association, January 1994.

[8] Affidavit of Professor Jerry A. Hausman before the Public Service Commission of South Carolina in re: *Whether or Not the South Carolina Public Service Commission Should File a Petition with the Federal Communications Commission under Section 332(c) (3) (B) of the Communication Act of 1934 Seeking Approval to Continue with Its Rate and Entry Regulation of all Commercial Mobile Radio Service (CMRS)*, filed June 13, 1994, pp. 3-4. Hausman considered the minimum monthly bill based on usage of 160 minutes/month with 80 percent peak usage.

[9] HPUC Petition, *op. cit.*, p 4.

whole.[10] For indices composed of the publicly traded cellular firms, the weighted average beta ranges from 1.062 to 1.70. which indicates the industry's stock price variability is greater than the stock market generally.[11] For example, in a declining market, these stocks are likely to fall further than the general market, and therefore, have a greater inherent risk. The electric utility industry, on the other hand, ranges from weighted average of 0.689 to 0.893, which means less risk.[12]

(11) Regulatory standards based on experience with stable electric utilities are not necessarily helpful in evaluating CMRS providers. Risk is, in part, apparent in fluctuating profitability. The HPUC noted this pattern, but incorrectly interpreted its significance. "The data show that the CMRS utilities generally experienced heavy losses during the early years and profitability after three or more years. . . .[T]he increase in the rate of return on the invested plant and equipment has substantially increased over the years, indicating that the return will become greater as more customers subscribe to CMRS."[13] First, the successful cellular providers survived the losses in the early years by investing in creating a demand for cellular services through technological improvements, increasing geographic coverage and marketing. They undertook the risk of developing and diffusing a new technology.[14] In return for bearing the risk, these successful providers eventually earned positive profits. Even today, substantial risk remains due to emerging wireless competition and new technological developments (e.g. whether to convert from analog to

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[10] "Stocks with betas greater than 1.0 tend to amplify the overall movements of the market. Stocks with betas between 0 and 1.0 tend to move in the same direction as the market, but not as far." R. Brealey and S. Myers, *Principles of Corporate Finance*, Fourth Edition, New York: McGraw Hill, Inc., 1991, p. 143.

[11] There are several data sources that identify firms in an industry and provide individual betas. To obtain weighted average betas for the wireless telecommunications industry, I used the following sources: 1) beta as reported by Bloomberg Financial Markets Commodities News (Bloomberg) for companies included in the Institutional Brokers Estimate System (I/B/E/S) listing of wireless service companies; 2) beta as reported by Bloomberg for companies included in its Primary SIC 4812, cellular service, list; and 3) beta as reported in Value Line Investment Survey (Value Line) for companies included in its Primary SIC 4812, cellular service, list. *See* Tables 2-4 in Attachment C.

[12] For the electric utility industry, the weighted average beta was calculated using: 1) data on beta from Bloomberg for companies included in its SIC 4911, electric utilities, list; and 2) beta reported in Value Line under electric utilities (east, west and central). *See* Tables 5-6 in Attachment C.

[13] HPUC Petition, *op. cit.*, p. 4.

[14] For example, "[t]he investment in AT&T equipment for the New York [cellular] metropolitan system alone is approximately $275 million." "Complaint for Injunctive and Other Relief" in the matter of *Bell Atlantic Corporation, Bell Atlantic Mobile Systems, Inc., NYNEX Corporation and NYNEX Mobile Communications Co. vs. AT&T Corp. and McCaw Cellular Communications, Inc.*, U.S. District Court for the Eastern District of New York, Civil Action No. CV-94-3682, filed August 8, 1994, p. 11 (Bell Atlantic/NYNEX vs. AT&T/McCaw).

digital systems). The electric utility firms, by contrast, have not been exposed to the uncertainty in recent years that stems from technological change and uncertain consumer reaction to a new technology, which in turn affects demand.

(12) One rate of return provided in the HPUC Petition is nearly 70 percent.[15] Rates of return derived at in HPUC's analysis vary significantly across firms. The CMRS firms in Hawaii have returns as calculated by HPUC ranging from -500 percent to 71 percent in 1993. The lack of stability across firms confirms the risk inherent in providing CMRS. *See* Attachment D.

(13) The risk associated with participating in this industry will have an impact on industry profitability in a number of ways. Regulators accustomed to monitoring public utilities, which have minimal risk and relatively stable profitability, may misinterpret the pattern of profitability. Profit is the reward for bearing risk. Firms would not invest or innovate without such incentives. This is the nature of CMRS. The risk for a provider of CMRS is much greater than for established industries such as electric utilities It is clear that rates of return for CMRS should be analyzed in the context of the risky environment.

(14) The premium for bearing risk is particularly relevant to the cellular services where the environment is volatile and dynamic. Rewards for innovation, where technological change drives growth and demand, are necessary. Competition from emerging wireless services, rather than regulation, will ensure these rewards exist initially and are eventually competed away.

2. Accounting Data do not Measure the Economic Rate of Return

(15) In reaching its conclusions on rate of return, HPUC relies on accounting data, which are subject to criticism.[16] Additionally, the analysis is limited to *operating* years only, or

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[15] We will not address whether the precise accounting rate of return measure (return on plant and equipment) used by HPUC is appropriate or whether HPUC used the correct data to calculate the return on plant and equipment for providers of CMRS in Hawaii. Both of these areas are likely to raise additional problems with the HPUC analysis.

[16] "The use of simple rates of return in the analysis of alternative investment projects is open to the serious criticism that it does not take account of the timing of capital outlays and earnings, and hence does not allow for the time value of money. Strictly speaking, the rate of return on capital employed in a business does not measure the return to capital alone or the efficiency of the use of resources by that business, since the returns to each of the factors of production cannot be separated out... Accounting costs...normally allow only for outlays, but cash outlays will only approximate to opportunity costs where competition ensures that the prices of all factors of production are equal to those for their best alternative use." G. Bannock, R. Baxter and E. Davis, *The Penguin Dictionary of Economics*, Fourth Edition, London: Penguin Books, 1987, pp. 91, 345. The economic profit is not printed on an accounting statement, yet it is extremely important for understanding business decision making. Economic profits, in contrast to accounting profits, signal whether the business makes sense and explains why new businesses are begun while others fold. *See* W. Boyes and M. Melvin, *Microeconomics*, Boston: Houghton Mifflin Company, 1991, p. 208.

years with residual income. The accounting equations define rate of return as sales revenues less explicit costs (wages, salaries, rent and materials). Economic rate of return, alternatively, takes into account explicit, or out-of-pocket costs, and also implicit costs. Implicit costs are the opportunity costs of resources contributed or already owned, research and development costs—start-up and ongoing—and the premium on uninsurable risks of investments.[17] To assess accurately whether excess returns exist, HPUC should examine the economic rate of return, not the accounting rate of return. HPUC does not present economic rate of return data.

3. Economies of Scale do not Necessarily Exist in Cellular

(16) Another misinterpretation of the rate of return data is to suggest that the rate of return will continue to increase as more customers subscribe to cellular services. Again, HPUC likely bases this interpretation on an inappropriate analogy to the electric industry where economies of scale exist. These economies of scale and the associated natural monopoly characteristics of the electric utility industry prompted the existing regulatory framework for electric utilities. Such economies of scale do not necessarily exist in cellular services.[18]

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[17] To attract capital for improved and expanded services into the industry, firms must earn the economic reward required by the level of risk.

[18] "Currently, the principal method of expanding the capacity of a cellular system is to add new cell sites. This allows a cellular provider to use its radio frequencies more efficiently. As demand increases, a cellular provider must also install additional switches." Bell Atlantic/NYNEX vs. AT&T/McCaw *op. cit.*, p. 10.

IV. CONCLUSION

(17) State regulation of CMRS raises prices to consumers and limits consumers' access to innovative technologies. The federal government perceived such problems when it prohibited states from regulating both entry into CMRS and rates of providers. The HPUC has not provided persuasive evidence to support its petition that state rate regulation should be continued in Hawaii.

Richard P. Rozek

Richard P. Rozek

Subscribed and sworn to before me

this 19th day of September 1994.

Deborah Lewis Dempsey

Notary Public

My Commission Expires April 30, 1995

ATTACHMENT A

RICHARD P. ROZEK

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Dr. Rozek received a B.A. degree in Mathematics with honors from the College of St. Thomas, a M.A. degree in Mathematics from the University of Minnesota, and M.A. and Ph.D. degrees in Economics from the University of Iowa.

Dr. Rozek began his professional career as an Assistant Professor at the University of Pittsburgh, where he taught industrial organization, mathematical economics and microeconomic theory. Dr. Rozek worked for over six years in the Bureau of Economics at the Federal Trade Commission in a series of senior staff positions including Deputy Assistant Director for Antitrust. While at the FTC, Dr. Rozek gained experience with antitrust and regulatory issues involving a variety of industries including electric and gas utilities, petroleum, soft drinks, for-profit and nonprofit hospitals, motion pictures and various high technology industries. Dr. Rozek also worked at the Pharmaceutical Manufacturers Association where he conducted research on issues such as the cost to develop a new drug, pharmaceutical industry profitability, benefits and costs of intellectual property protection, productivity of research and development personnel in the pharmaceutical industry, and reform of the health care reimbursement system.

Since joining NERA, Dr. Rozek has worked on projects involving regulated industries, including design of bidding processes for power generation markets and analysis of hospital rate regulation schemes; competition analyses in industries such as convenience food, electric equipment, electric utilities, health care, newspaper, pharmaceutical, telecommunications, and professional services; damage estimates in contract dispute, patent infringement, personal injury and libel cases; compensation issues in professional sports; and public policy studies in the pharmaceutical industry (intellectual property protection, parallel trade and pricing).

Dr. Rozek's articles have appear in such journals as *American Economist, Applied Economics, Contemporary Policy Issues, Electricity Journal, Energy Journal, Economics Letters, Journal of Economic Integration, Journal of Economics, Mathematical Modelling, Metroeconomica* and *Research Policy*.

EDUCATION:

UNIVERSITY OF IOWA
Ph.D., Economics, 1976
M.A., Economics, 1974

UNIVERSITY OF MINNESOTA
M.A., Mathematics, 1971

COLLEGE OF ST. THOMAS
B.A., Mathematics, 1969 (cum laude)

EMPLOYMENT:

NATIONAL ECONOMIC RESEARCH ASSOCIATES, INC.--Washington, D.C.

1991- Vice President.

1987-91 Senior Consultant. Worked on projects involving regulated industries including design of bidding processes for power generation markets and analysis of hospital rate regulation schemes; competition analyses in industries such as convenience food, electric equipment, electric utility, hospital, newspaper, pharmaceutical, telecommunications and professional services; damage estimates in contract dispute, patent infringement, personal injury and libel cases; compensation issues in professional sports; and public policy studies in the pharmaceutical industry (intellectual property protection, parallel trade and pricing).

PHARMACEUTICAL MANUFACTURERS ASSOCIATION--Washington, D.C.

1985-87 Senior Analyst, Economics. Analyzed issues affecting the research based pharmaceutical industry including intellectual property protection, costs and benefits of pharmaceutical therapies, the cost to develop a new pharmaceutical product, industry profitability and Medicare/Medicaid reform.

FEDERAL TRADE COMMISSION--Washington, D.C.

1979-85 Staff Economist, Antitrust and Regulatory Analysis Divisions, Bureau of Economics. Analyzed antitrust and regulatory issues involving computers, hospitals, oil, public utilities, securities (stock and futures), soft drinks, and various consumer goods industries.

1982-83 Deputy Assistant Director for Antitrust, Division of Antitrust, Bureau of Economics. Supervised eight staff economists working on a broad set of antitrust matters.

UNIVERSITY OF PITTSBURGH--Pittsburgh, Pennsylvania

1976-79 Assistant Professor, Department of Economics. Taught graduate and undergraduate courses in general equilibrium theory, mathematical economics, mathematics for economists, industrial organization, operations research and microeconomic theory; served on departmental committees; and supervised graduate student research projects.

UNIVERSITY OF IOWA--Iowa City, Iowa

1973-76 Research Assistant, Teaching Assistant, Instructor, College of Business Administration.

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1972-73 Instructor, Department of Mathematics. Taught undergraduate courses in number theory, integral and differential calculus, probability and statistics.

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